

| Ref # | Hits | Search Query   | DBs                | Default Operator | Plurals | Time Stamp       |
|-------|------|--|--------------------|------------------|---------|------------------|
| L1    | 0    | (704/9andmatri\$5).CCLS.   | US-PGPUB;<br>USPAT | OR               | OFF     | 2006/02/15 15:10 |
| L2    | 148  | 704/9.ccls. and matri\$7   | US-PGPUB;<br>USPAT | OR               | OFF     | 2006/02/15 15:10 |
| L3    | 24   | 704/9.ccls. and matri\$7 and<br>(machin\$3 formal\$5) near1<br>languag\$3  | US-PGPUB;<br>USPAT | OR               | OFF     | 2006/02/15 15:38 |
| L4    | 38   | 704/9.ccls. and algeb\$7   | US-PGPUB;<br>USPAT | OR               | OFF     | 2006/02/15 16:56 |
| L5    | 945  | 704/9.ccls.  | US-PGPUB;<br>USPAT | OR               | OFF     | 2006/02/15 16:56 |
| L6    | 5    | ((("5878385") or ("5966686") or<br>("6070134") or ("6029123") or<br>("6108620")).PN.                               | US-PGPUB;<br>USPAT | OR               | OFF     | 2006/02/15 16:56 |
| L7    | 98   | (translat\$7 conver\$5) adj4<br>natural\$3 near1 languag\$3 near4<br>(machin\$3) near1 languag\$3                  | US-PGPUB;<br>USPAT | OR               | OFF     | 2006/02/15 16:56 |
| L8    | 25   | (translat\$7 conver\$5) adj4<br>natural\$3 adj1 languag\$3 adj4<br>(machin\$3 execut\$7) near1<br>languag\$3       | US-PGPUB;<br>USPAT | OR               | OFF     | 2006/02/15 16:56 |
| L9    | 5    | (translat\$7 conver\$5) adj4<br>natural\$3 near1 languag\$3 near4<br>(machin\$3) near1 languag\$3 and<br>algebr\$5 | US-PGPUB;<br>USPAT | OR               | OFF     | 2006/02/15 16:56 |
| L10   | 5    | (translat\$7 conver\$5) adj4<br>natural\$3 near1 languag\$3 near4<br>(machin\$3) near1 languag\$3 and<br>algebr\$5 | US-PGPUB;<br>USPAT | OR               | OFF     | 2006/02/15 16:56 |
| L11   | 22   | synta\$7 near1 algebr\$7   | US-PGPUB;<br>USPAT | OR               | OFF     | 2006/02/15 16:56 |
| L12   | 56   | semant\$7 near2 algebr\$7  | US-PGPUB;<br>USPAT | OR               | OFF     | 2006/02/15 16:56 |
| L13   | 89   | natural\$7 near2 languag\$3 near2<br>translat\$7 near2 (machin\$3<br>computer\$3 execut\$7)                        | US-PGPUB;<br>USPAT | OR               | OFF     | 2006/02/15 16:56 |
| L14   | 1    | natural\$7 adj2 languag\$3 adj2<br>translat\$7 adj2 (machin\$3<br>execut\$7)                                       | US-PGPUB;<br>USPAT | OR               | OFF     | 2006/02/15 16:56 |
| L15   | 1    | natural\$7 adj2 languag\$3 adj7<br>translat\$7 adj2 (machin\$3<br>execut\$7)                                       | US-PGPUB;<br>USPAT | OR               | OFF     | 2006/02/15 16:56 |
| L16   | 0    | natural\$7 adj2 languag\$3 with<br>translat\$7 adj2 (machin\$3<br>execut\$7) same matri\$5                         | US-PGPUB;<br>USPAT | OR               | OFF     | 2006/02/15 16:56 |

|     |      |   |   |    |     |                  |
|-----|------|---|---|----|-----|------------------|
| L17 | 6    | natural\$7 adj2 languag\$3 with<br>translat\$7 adj2 (machin\$3<br>execut\$7) and matri\$5                                   | US-PGPUB;<br>USPAT                          | OR | OFF | 2006/02/15 16:56 |
| L18 | 6    | natural\$7 adj2 languag\$3 with<br>(conver\$8 translat\$7) adj2<br>(machin\$3 execut\$7) and matri\$5                       | US-PGPUB;<br>USPAT                          | OR | OFF | 2006/02/15 16:56 |
| L19 | 15   | natural\$7 adj2 languag\$3 with<br>(conver\$8 translat\$7) adj5<br>(machin\$3 execut\$7) and matri\$5                       | US-PGPUB;<br>USPAT                          | OR | OFF | 2006/02/15 16:56 |
| L20 | 1139 | natural\$3 adj languag\$3 and<br>(matrix matrices)  | US-PGPUB;<br>USPAT                          | OR | OFF | 2006/02/15 16:56 |
| L21 | 64   | natural\$3 adj languag\$3 and<br>(matrix matrices) near3 reduc\$7   | US-PGPUB;<br>USPAT                          | OR | OFF | 2006/02/15 16:56 |
| L22 | 666  | computat\$7 near2 linguist\$7   | US-PGPUB;<br>USPAT;<br>EPO; JPO;<br>DERWENT | OR | OFF | 2006/02/15 16:56 |
| L23 | 4    | natural\$3 adj languag\$3 with<br>(executab\$3) and (e\$mail\$3<br>electronic near1 mail) near2<br>(instruct\$7 command\$3) | US-PGPUB;<br>USPAT                          | OR | OFF | 2006/02/15 16:56 |
| L24 | 5    | ("5535120"   "5555169"  <br>"5613036"   "5642519"  <br>"5729659").PN.   | US-PGPUB;<br>USPAT;<br>USOCR                | OR | OFF | 2006/02/15 16:56 |
| L25 | 1    | ("6311150").URPN.   | USPAT                                       | OR | OFF | 2006/02/15 16:56 |
| L26 | 1    | ("6311150").URPN.   | USPAT                                       | OR | OFF | 2006/02/15 16:56 |
| L27 | 1    | ("6311150").URPN.   | USPAT                                       | OR | OFF | 2006/02/15 16:56 |
| L28 | 5    | ("5535120"   "5555169"  <br>"5613036"   "5642519"  <br>"5729659").PN.   | US-PGPUB;<br>USPAT;<br>USOCR                | OR | OFF | 2006/02/15 16:56 |
| L29 | 27   | ("5729659").URPN.   | USPAT                                       | OR | OFF | 2006/02/15 16:56 |
| L30 | 0    | method near1 system near1<br>robustness near1 natural near1<br>language near1 understand\$3                                 | US-PGPUB;<br>USPAT                          | OR | OFF | 2006/02/15 16:56 |
| L31 | 0    | method near1 system near3<br>robust\$ near1 natural near1<br>language near1 understand\$3                                   | US-PGPUB;<br>USPAT                          | OR | OFF | 2006/02/15 16:56 |
| L32 | 5    | robust\$ near1 natural near1<br>language near1 understand\$3  | US-PGPUB;<br>USPAT                          | OR | OFF | 2006/02/15 16:56 |
| L33 | 3    | ensur\$7 with robust\$ with natural<br>with language with understand\$3   | US-PGPUB;<br>USPAT                          | OR | OFF | 2006/02/15 16:56 |
| L34 | 74   | "5418717"   | US-PGPUB;<br>USPAT                          | OR | OFF | 2006/02/15 16:56 |
| L35 | 37   | "5748974"   | US-PGPUB;<br>USPAT                          | OR | OFF | 2006/02/15 16:56 |
| L36 | 3    | "6243677"   | US-PGPUB;<br>USPAT                          | OR | OFF | 2006/02/15 16:56 |

|     |     |   |                    |    |     |                  |
|-----|-----|---|--------------------|----|-----|------------------|
| L37 | 6   | "6092034"   | US-PGPUB;<br>USPAT | OR | OFF | 2006/02/15 16:56 |
| L38 | 10  | "5987404"   | US-PGPUB;<br>USPAT | OR | OFF | 2006/02/15 16:56 |
| L39 | 12  | "5991710"   | US-PGPUB;<br>USPAT | OR | OFF | 2006/02/15 16:56 |
| L40 | 55  | "5255386"   | US-PGPUB;<br>USPAT | OR | OFF | 2006/02/15 16:56 |
| L41 | 109 | "5239617"   | US-PGPUB;<br>USPAT | OR | OFF | 2006/02/15 16:56 |
| L42 | 9   | ((("5418717") or ("5748974") or<br>("6243677") or ("6092034") or<br>("5987404") or ("5991710") or<br>("5255386") or ("5239617") or<br>("6278967"))).PN. | US-PGPUB;<br>USPAT | OR | OFF | 2006/02/15 16:56 |
| L43 | 0   | ("synta\$7near1(complex\$5algebra<br>\$3)").PN.   | US-PGPUB;<br>USPAT | OR | OFF | 2006/02/15 16:56 |
| L44 | 249 | synta\$7 near1 (complex\$5<br>algebra\$3)   | US-PGPUB;<br>USPAT | OR | OFF | 2006/02/15 16:56 |
| L45 | 10  | synta\$7 near1 (complex\$5<br>algebra\$3) and (formal\$<br>executab\$ machin\$3) near1<br>languag\$3  | US-PGPUB;<br>USPAT | OR | OFF | 2006/02/15 16:56 |
| L46 | 3   | metascript\$3   | US-PGPUB;<br>USPAT | OR | OFF | 2006/02/15 16:56 |
| L47 | 12  | natural\$ near1 languag\$3 near1<br>machine\$3 with (conver\$7<br>translat\$7)  | US-PGPUB;<br>USPAT | OR | OFF | 2006/02/15 16:56 |

| Ref # | Hits | Search Query  | DBs                | Default Operator | Plurals | Time Stamp       |
|-------|------|---|--------------------|------------------|---------|------------------|
| S54   | 0    | ("synta\$7near1(complex\$5algebra\$3)").PN.   | US-PGPUB;<br>USPAT | OR               | OFF     | 2006/01/17 14:15 |
| S55   | 245  | synta\$7 near1 (complex\$5 algebra\$3)  | US-PGPUB;<br>USPAT | OR               | OFF     | 2006/01/17 14:16 |
| S56   | 10   | synta\$7 near1 (complex\$5 algebra\$3) and (formal\$ executab\$ machin\$3) near1 languag\$3 | US-PGPUB;<br>USPAT | OR               | OFF     | 2006/01/17 14:24 |
| S57   | 3    | metascript\$3   | US-PGPUB;<br>USPAT | OR               | OFF     | 2006/01/17 14:27 |
| S58   | 12   | natural\$ near1 languag\$3 near1 machine\$3 with (conver\$7 translat\$7)                    | US-PGPUB;<br>USPAT | OR               | OFF     | 2006/01/17 14:29 |


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### 1 [NFQL: the natural forms query language](#)



David W. Embley

 June 1989 **ACM Transactions on Database Systems (TODS)**, Volume 14 Issue 2

Publisher: ACM Press

 Full text available: [pdf\(3.56 MB\)](#)

 Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

A means by which ordinary forms can be exploited to provide a basis for nonprocedural specification of information processing is discussed. The Natural Forms Query Language (NFQL) is defined. In NFQL data retrieval requests and computation specifications are formulated by sketching ordinary forms to show what data are desired and update operations are specified by altering data on filled-in forms. The meaning of a form depends on a store of knowledge that includes extended abstract data type ...

### 2 [A natural language interface for information retrieval from forms on the World Wide Web](#)



Frank Meng

 January 1999 **Proceeding of the 20th international conference on Information Systems**

Publisher: Association for Information Systems

 Full text available: [pdf\(146.82 KB\)](#) Additional Information: [full citation](#), [references](#), [index terms](#)

### 3 [Query languages for the casual user: Exploring the middle ground between formal and natural languages](#)



William C. Ogden, Susan R. Brooks

 December 1983 **Proceedings of the SIGCHI conference on Human Factors in Computing Systems**

Publisher: ACM Press

 Full text available: [pdf\(516.25 KB\)](#)

 Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

In the past the non-programmer who wanted the information contained in a computer database had to employ an expert programmer knowledgeable in the language and structure of the database. Now languages are being developed that are designed to be used by an infrequent or "casual" user who has limited knowledge of how the data is stored or retrieved by the computer. These special purpose query languages which allow these casual users to retrieve information from computer databases ...

4 Grammar III: Formal specification of natural language syntax using two-level grammar

Barrett R. Bryant, Dale Johnson, Balanjaninath Edupuganty

August 1986 **Proceedings of the 11th conference on Computational linguistics**

**Publisher:** Association for Computational Linguistics

Full text available:  [pdf\(664.96 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#)



The two-level grammar is investigated as a notation for giving formal specification of the context-free and context-sensitive aspects of natural language syntax. In this paper, a large class of English declarative sentences, including post-noun-modification by relative clauses, is formalized using a two-level grammar. The principal advantages of two-level grammar are: 1) it is very easy to understand and may be used to give a formal description using a structured form of natural language; 2) it ...

5 A formal basis for performance evaluation of natural language understanding systems

Giovanni Guida, Giancarlo Mauri

January 1984 **Computational Linguistics**, Volume 10 Issue 1

**Publisher:** MIT Press

Full text available:  [pdf\(1.23 MB\)](#)  Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)  
[Publisher Site](#)



The task of evaluating the performance of a natural language understanding system, despite its largely recognized relevance, is still poorly defined. It mostly relies on intuitive reasoning and lacks a sound theoretical foundation. This paper sets a formal and quantitative proposal for this task. In particular, a measure of performance that allows the basic input-output characteristics of a system to be evaluated is introduced first at an abstract level. The definition of concrete measures is th ...

6 Relaxation techniques for parsing grammatically III-formed input in Natural Language Understanding Systems

Stan C. Kwasny, Norman K. Sondheimer

April 1981 **Computational Linguistics**, Volume 7 Issue 2

**Publisher:** MIT Press

Full text available:  [pdf\(1.02 MB\)](#)  Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)  
[Publisher Site](#)

This paper investigates several language phenomena either considered deviant by linguistic standards or insufficiently addressed by existing approaches. These include co-occurrence violations, some forms of ellipsis and extraneous forms, and conjunction. Relaxation techniques for their treatment in Natural Language Understanding Systems are discussed. These techniques, developed within the Augmented Transition Network (ATN) model, are shown to be adequate to handle many of these cases.

7 Research contributions - University of Southern California: A logical-form and knowledge-base design for natural language generation

Norman K. Sondheimer, Bernhard Nebel

May 1986 **Proceedings of the workshop on Strategic computing natural language HLT '86**

**Publisher:** Association for Computational Linguistics

Full text available:  [pdf\(723.34 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#)

This paper presents a technique for interpreting output demands by a natural language sentence generator in a formally transparent and efficient way. These demands are stated


in a logical language. A network knowledge base organizes the concepts of the application domain into categories known to the generator. The logical expressions are interpreted by the generator using the knowledge base and a restricted, but efficient, hybrid knowledge representation system. This design has been used to allo ...

- 8 Book reviews: Review of "The formal complexity of natural language" by Walter J. Savitch, Emmon Bach, William Marsh, and Gila Safran-Naveh. D. Reidel 1987.

Alexis Manaster-Ramer

December 1988 **Computational Linguistics**, Volume 14 Issue 4

**Publisher:** MIT Press

Full text available:  [pdf\(763.93 KB\)](#)

Additional Information: [full citation](#), [references](#)

 [Publisher Site](#)

- 9 Long papers: natural language and gestural input: User interfaces with semi-formal representations: a study of designing argumentation structures

Timothy Chklovski, Varun Ratnakar, Yolanda Gil

January 2005 **Proceedings of the 10th international conference on Intelligent user interfaces**

**Publisher:** ACM Press

Full text available:  [pdf\(192.64 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

When designing mixed-initiative systems, full formalization of all potentially relevant knowledge may not be cost-effective or practical. This paper motivates the need for semi-formal representations that combine machine-processable structures with free text statements, and discusses the need to design them in a way that makes the free text more amenable to automated structuring and processing. Our work is done in the context of argumentation systems, and has explored a range of tradeoffs in com ...

**Keywords:** argumentation, decision-making, meaning decomposition, natural language understanding, semi-formal representations

- 10 Automating review of forms for international trade transactions: a natural language processing approach

V. Dhar, P. Ranganathan

December 1986 **ACM SIGOIS Bulletin , Proceedings of the third ACM-SIGOIS conference on Office automation systems**, Volume 7 Issue 2-3

**Publisher:** ACM Press

Full text available:  [pdf\(871.03 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

A major challenge in Office Automation is one of automating routine jobs that involve large-scale processing of ill-formed natural language data. Such data are often present in documents such as forms where it is necessary and/or practical to allow latitude in how the forms may be filled. In this paper, we describe a computational model designed to process free-form textual data in application forms for Letters of Credit (LC), which represent a common vehicle for initiating international tr ...

- 11 Towards a computational formalization of natural language semantics

Robert M. Schwarcz

September 1969 **Proceedings of the 1969 conference on Computational linguistics**

**Publisher:** Association for Computational Linguistics

Full text available:  [pdf\(1.45 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#)

The formalization of natural language semantics is a problem central to a number of

major academic and practical concerns. A semantic theory requires a formalized representation of messages, arrangements of morphological units, and the processes of encoding and decoding that relate them. Formal logic has provided a paradigm for semantics based on the notions of model, extension, and intention; with certain changes and additions, this paradigm indicates what is needed for a theory of natural lang ...

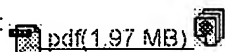
## 12 Contextual grammars as generative models of natural languages

Solomon Marcus, Gheorghe Păun, Carlos Martín-Vide

June 1998 **Computational Linguistics**, Volume 24 Issue 2

**Publisher:** MIT Press

Full text available:



Additional Information: [full citation](#), [abstract](#), [references](#)

[Publisher Site](#)

The paper discusses some classes of contextual grammars---mainly those with "maximal use of selectors"---giving some arguments that these grammars can be considered a good model for natural language syntax. A contextual grammar produces a language starting from a finite set of words and iteratively adding contexts to the currently generated words, according to a selection procedure: each context has associated with it a selector, a set of words; the context is adjoined to any occurrence of such ...

## 13 Reasoning about inconsistencies in natural language requirements

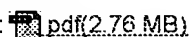
Vincenzo Gervasi, Didar Zowghi

July 2005 **ACM Transactions on Software Engineering and Methodology (TOSEM)**,

Volume 14 Issue 3

**Publisher:** ACM Press

Full text available:



Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

The use of logic in identifying and analyzing inconsistency in requirements from multiple stakeholders has been found to be effective in a number of studies. Nonmonotonic logic is a theoretically well-founded formalism that is especially suited for supporting the evolution of requirements. However, direct use of logic for expressing requirements and discussing them with stakeholders poses serious usability problems, since in most cases stakeholders cannot be expected to be fluent with formal log ...

**Keywords:** Requirements, default logic, inconsistency, natural language

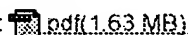
## 14 LDC-1: a transportable, knowledge-based natural language processor for office environments

Bruce W. Ballard, John C. Lusth, Nancy L. Tinkham

January 1984 **ACM Transactions on Information Systems (TOIS)**, Volume 2 Issue 1

**Publisher:** ACM Press

Full text available:



Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

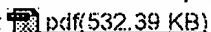
## 15 Copying in natural languages, context-freeness, and Queue Grammars

Alexis Manaster-Ramer

July 1986 **Proceedings of the 24th annual meeting on Association for Computational Linguistics**

**Publisher:** Association for Computational Linguistics

Full text available:



Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

[Publisher Site](#)

The documentation of (unbounded-length) copying and cross-serial constructions in a few languages in the recent literature is usually taken to mean that natural languages are



slightly context-sensitive. However, this ignores those copying constructions which, while productive, cannot be easily shown to apply to infinite sublanguages. To allow such finite copying constructions to be taken into account in formal modeling, it is necessary to recognize that natural languages cannot be realistically ...

# 16 Natural language information retrieval system dialog


L. Bolo, K. Kochut, A. Leśniewski, T. Strzałkowski

September 1983 **Proceedings of the first conference on European chapter of the Association for Computational Linguistics**

**Publisher:** Association for Computational Linguistics

Full text available:  [pdf\(613.66 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#)

 [Publisher Site](#)


Presented paper contains a description of an experimental version of the natural language information retrieval system DIALOG. The system is destined for the use in the field of medicine. Its main purpose is to ensure access to information to physicians in a conversational manner. The use of the system does not require ability of programming from its user.

# 17 An intelligent approach to handling imperfect information in concept-based natural language queries

Vesper Owei

July 2002 **ACM Transactions on Information Systems (TOIS)**, Volume 20 Issue 3

**Publisher:** ACM Press

Full text available:  [pdf\(5.44 MB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Missing information, imprecision, inconsistency, vagueness, uncertainty, and ignorance abound in information systems. Such imperfection is a fact of life in database systems. Although these problems are widely studied in relational database systems, this is not the case in conceptual query systems. And yet, concept-based query languages have been proposed and some are already commercial products. It is therefore imperative to study these problems in concept-based query languages, with a view to ...



**Keywords:** ambiguous query, anaphoric query, concept-based query, conceptual query language, elliptical query, imperfect queries, incomplete information, inconsistency, inexplicit query, missing information, natural language interface, natural language query, semantically mismatched query

# 18 A phrase-structured grammatical framework for transportable natural language processing

Bruce W. Ballard, Nancy L. Tinkham

April 1984 **Computational Linguistics**, Volume 10 Issue 2

**Publisher:** MIT Press

Full text available:  [pdf\(1.51 MB\)](#) 

[Publisher Site](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

We present methods of dealing with the syntactic problems that arise in the construction of natural language processors that seek to allow users, as opposed to computational linguists, to customize an interface to operate with a new domain of data. In particular, we describe a *grammatical formalism*, based on augmented phrase-structure rules, which allows a parser to perform many important domain-specific disambiguations by reference to a pre-defined grammar and a collection of auxiliary f ...

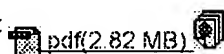
# 19 Natural language querying of historical databases

James Clifford

December 1988 **Computational Linguistics**, Volume 14 Issue 4

**Publisher:** MIT Press

Full text available:



Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)  
[Publisher Site](#)

In this paper we examine the connection between two areas of semantics, namely the semantics of historical databases and the semantics of natural language querying, and link them together via a common view of the semantics of time. Since the target application domain is an historical database, we present the essential features of the Historical Relational Database Model (HRDM), an extension to the relational model motivated by the desire to incorporate more "real world" semantics into a database ...

20 Natural language question-answering systems: 1969

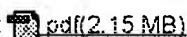


Robert F. Simmons

January 1970 **Communications of the ACM**, Volume 13 Issue 1

**Publisher:** ACM Press

Full text available:



Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

Recent experiments in programming natural language question-answering systems are reviewed to summarize the methods that have been developed for syntactic, semantic, and logical analysis of English strings. It is concluded that at least minimally effective techniques have been devised for answering questions from natural language subsets in small scale experimental systems and that a useful paradigm has evolved to guide research efforts in the field. Current approaches to semantic analysis ...

**Keywords:** artificial intelligence, fact retrieval, language processing, natural language, question-answering system, semantics

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» Key

IEEE JNL IEEE Journal or Magazine

IEE JNL IEE Journal or Magazine

IEEE CNF IEEE Conference Proceeding

IEE CNF IEE Conference Proceeding

IEEE STD IEEE Standard

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... 4 and 5, I describe two applications of semantic similarity to problems of ambiguity in **natural language**. ... is used as the evaluation metric, the **conversion** from a ...

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AHM ter Hofstede, HA Proper, T van der Weide - 1992 - cs.kun.nl

... techniques however, do not provide a **language**, which on the one hand has a **formal** semantics and on the other hand leads to **natural** looking expressions, for ...

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... into a database query **language**, and the **conversion** of flight ... called upon to generate not only **natural language** strings but also **formal language** strings and ...

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TR Gruber - International Journal of Human Computer Studies, 1995 - ra.crema.unimi.it

... informally, such as those described in **natural language** documentation and ... then be used as a **language** for communication ... We have seen how a **formal** ontology for ...

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H Kamp, U Reyle - Computational Linguistics - portal.acm.org

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SM Shieber - Linguistics and Philosophy, 1985 - Springer

... evidence for the weak non-context-freeness of **natural language**. Using data collected from native Swiss-German speakers, we will provide a **formal** proof of the ...

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J Allen - 1995 - lalonso.sdf-eu.org

... 16 CHAPTER 1. INTRODUCTION TO **NATURAL LANGUAGE** UNDERSTANDING ... What constrains the mathematical models of structure (eg, **formal** possible meanings for a sentence? ...

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... Thus, a semantic theory for **natural language** cannot be based on the predicate ... model-theorists have found more profitable, is to keep the **formal** definition as ...

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A Tarski - Logic, Semantics, Metamathematics, 1956 - ryanflannery.net

... is that they are universal in the sense that anything that can be spoken of can be spoken of in a **natural language** (in contrast with **formal** languages which are ...

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G Fauconnier - 1994 - books.google.com

... They attempt to account for the meaning of **natural language** sentences using only the mechanisms of **formal** syntax and set theory, without permit- ting any ...

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E REITER, R DALE - **Natural Language** Engineering, 2000 - CambridgeUnivPress

... Building applied **natural language** generation systems ... then used by the subsequent **language** generation processes ... are expressed in some **formal language** that labels ...

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S Pinker, P Bloom - BEHAVIORAL AND BRAIN SCIENCES, 1994 - bbsonline.org

... not meant to be used in a **natural** on-line ... and solve these problems with **formal** syntactic systems ... the mere fact that terms like "**language**," "**syntax**," "**predicate** ...

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R Bod - 1995 - essex.ac.uk

... of **natural language** sentences in specific situations (Chomsky, 1957, 1965). This dichotomy has become the methodological paradigm for all **formal** linguistic ...

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... 5, I describe two applications of semantic similarity to problems of ambiguity in **natural language**. ... is a variant on the edge-counting method, **converting** it from ...

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... a flattened electronic form, and subsequently, **converting** the electronic ... to generate not only **natural language** strings but also **formal language** strings and ...

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**Lexical Issues in Natural Language Processing** - group of 8 »

T Briscoe - **Natural Language** and Speech, 1991 - iling.torreingenieria.unam.mx

... **Natural language** processing applications, ranging from superficial text ... Cobuild English **Language** Dictionary only approach ... to the problems of **converting** MRDs into ...

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CR Perrault, BJ Grosz - Annual Review of Computer Science, 1986 - arjournals.annualreviews.org

... **NATURAL-LANGUAGE INTERFACES** 49 ... is to translate utterances in 'NL to expressions of a more immediately interpretable form, such as the **formal query language** ...

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**International contracting—a formal language approach** - group of 4 »

RM Lee - Proceedings of the 21st Hawaii International Conference on ... - ieeeexplore.ieee.org

... However, in **converting** from **natural language** to an internal **formal** representation, there are typically multiple **natural language** forms that will have the same ...

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... is a tool which allows the **formal** verification of ... We used the Alvey **Natural Language** Tools Grammar [3 ... The process of **converting** the semantic representations ...

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**[PS] Self-Organizing Maps in Natural Language Processing - group of 5 »**

T Honkela - NASA, 1997 - cis.hut.fi

... when a **natural-language** database interface is considered, the result of the transformation must be syntactically correct in order to obtain a correct **formal** ...[Cited by 55](#) - [View as HTML](#) - [Web Search](#)**Natural-Language Processing Support for Developing Policy-Governed Software Systems - group of 9 »**

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... automated processing necessitates **converting the natural language** into a computational form, usually expressible as well-formed formulae in a **formal language** [7 ...[Cited by 14](#) - [Web Search](#)**[book] Speech and language processing**

D Jurafsky, JH Martin - 2000 - courses.media.mit.edu

... An Introduction to **Natural Language Processing**, Computational Linguistics ... the meaning of linguistic utterances can be captured in **formal** structures, which we ...[Cited by 513](#) - [View as HTML](#) - [Web Search](#)

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P Resnik - JAIR, 1999 - users.cs.dal.ca

... of semantic similarity to problems of ambiguity in **natural language**. ... can be a bird or a **machine**, but not ... variant on the edge-counting method, **converting** it from ...

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Natural-language interfaces - group of 4 »

CR Perrault, BJ Grosz - Annual Review of Computer Science, 1986 - arjournals.annualreviews.org

... **Natural language** (NL) is but one of the methods available for human- **machine** interaction, but ... It shields the user from the **formal access language** of ...

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Automatic recognition and understanding of spoken language—a first step toward natural human-machine ... - group of 3 »

BH Juang, S Furui - Proc. IEEE, 2000 - ieeexplore.ieee.org

... to-text conversion purposes (eg, **converting** voice- mails ... word/command recognition to **natural** conver- sation ... RECOGNITION AND UNDERSTANDING OF SPOKEN LANGUAGE ...

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RM Lee - Proceedings of the 21st Hawaii International Conference on ... - ieeexplore.ieee.org

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T Honkela - NASA, 1997 - cis.hut.fi

... than developing a system for **machine** translation (MT ... the other hand, when a **natural-language** database interface ... order to obtain a correct **formal** expression in ...

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[PS] GATE: An Environment to Support Research and Development in Natural Language Engineering - group of 10 »

RJ Gaizauskas, H Cunningham, Y Wilks, PJ Rodgers, ... - ICTAI, 1996 - dcs.shef.ac.uk

... tion from short, **natural language** texts typically newswire articles (see ... The major work in **converting** LaSIE to VIE ... are specied in a **formal** 'module registration ...

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Converting a controlled vocabulary into an ontology: the case of GEM - group of 2 »

J Qin, S Paling - Information Research, 2001 - informationr.net

... The above discussion of **formal** ontologies and ... a practical question for **converting** a controlled ... or computational context, and documented with **natural language**. ...

[Cited by 14](#) - [Cached](#) - [Web Search](#)

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JB Michael, VL Ong, NC Rowe - Int. Conf. Technology for Object-Oriented Languages and ... - doi.ieeecomputersociety.org

... However, efficient automated processing necessitates **converting the natural language** into a ... expressible as well-formed formulae in a **formal language** [7]. ...

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... **Natural language** processing applications, ranging from superficial text ... Cobuild English **Language** Dictionary only approach ... to the problems of **converting** MRDs into ...

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[The Role of Natural Language in a Multimodal Interface - group of 2 »](#)

PR Cohen, AI Center - portal.acm.org

... useful feature of a description **language** is the ability to ... of these capabilities are found in **formal** query languages ... (and more) are found in **natural** languages. ...

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